4K92-39

AN ASSESSMENT OF THE BYCATCH IN THE PACIFIC COD GILLNET FISHERY, CENTRAL GULF OF ALASKA, 1981 AND 1991-92.

By

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Regional Information Report[1] No. 4K92-39

Alaska Department of Fish and Game
Division of Commercial Fisheries
211 Mission Road
Kodiak, AK 99615

November 1992

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INTRODUCTION

In the early 1980's, sunken gillnets were used to commercially harvest Pacific cod in the Kodiak area. Vessel operators were required to obtain a permit from the Alaska Department of Fish and Game (ADF&G), Division of Commercial Fisheries to fish the gear, and they were required to maintain and submit logbooks. The concern was to minimize bycatch, particularly of salmon, crab and halibut. Permit stipulations included drop lines between the lead line and the net to keep the gear at least 18 inches off the bottom, fishing was allowed in depths of 40 fathoms or more, and areas of suspected salmon concentrations were closed.

In late 1991, there was new interest in fishing Pacific cod with sunken gillnets in the Kodiak and Lower Cook Inlet areas. A total of nine permits were issued for the 1991-92 winter season, and as in the past, logbooks were required to be completed and submitted by the operators. Department observers were placed on some of the boats to better evaluate the fishery and in particular, record the bycatch.

In November 1992, the Alaska Board of Fisheries will address several regulatory proposals dealing with the use of sunken gillnets for cod fishing in the Gulf of Alaska. The purpose of this paper is to summarize, in a single document, the bycatch data collected from the sunken gillnet fishery in 1981 (Blackburn, 1992) and winter, 1991-92.

METHODS

In 1981, Department observers made a total of five trips onboard one of two vessels participating in the sunken gillnet fishery for Pacific cod. Twenty-six sets were examined for catch. When the gear was deployed the observer recorded date, time, location, and depth. As the gear came aboard the observer tallied catch by species and as time permitted took samples of lengths. Samples of halibut were measured, and a subjective assessment of their viability was recorded using a five category scale: excellent, good, fair, poor, dead, described by Hoag (1975). Note was taken of the number of fish, by species, retained for sale. The exception was that occasionally only the bycatch from a set was counted by species, and during one trip the results from the individual sets were combined into a single catch report. It was not practical to obtain total fish weights since the catch was sorted as it came aboard. However, samples of Pacific cod were weighed both before and after dressing to estimate weight loss. Total delivery weights were obtained from fish tickets issued at the time of sale. Since the fish were delivered bled and gutted, round weights of landed cod and pollock were estimated from the samples taken. Weight of halibut was estimated from individual length measurements. Gear length, depth, and mesh size measurements were reported for one trip.

In the 1991-92 fishery, observer trip selection was based on staff availability and vessel access. Onboard the vessels, observers hand tallied the catch by species, recorded set duration to nearest

half hour, date, net length, fishing depth in fathoms, and usually numbers of fish/crab by species or species grouping; groupings were halibut, king crab, Tanner crab, salmon, Pacific cod, pollock, flounder, and other. The condition of halibut was described in trip summaries since a preset condition assessment scheme was not used. Fish tickets for each trip provided weight of catch sold.

Logbooks from the 1991-92 fishery usually contained date, net length, set time, retrieval time, depth, general area, pounds of target species and catch of other species for each set. However, the units (pounds or numbers) of other species often was not stated clearly and usually appeared to be counts.

A copy of the gillnet permit, gillnet permit terms, and logbooks provided during 1991-92 by Alaska Department of Fish and Game is attached as Appendices A.1 - A.3. Copies of logbooks used in the early 1980's are no longer available.

The data were summarized by use of a computer spreadsheet program.

RESULTS

In 1981, a total of five trips were made onboard one of two vessels participating in the sunken gillnet fishery. Twenty six sets were individually examined. The species catch numbers by trip are listed in Table 1.

The 1981 catch in numbers was dominated by Pacific cod, pollock, great sculpin, Tanner crab, halibut, flathead sole, and red king crab (Figure 1). Overall, an estimated 24 Tanner crab, 18 halibut and 10 red king crab per metric ton of cod and pollock were taken (Table 1). Birds were not present in the data but it is not clear whether this is due to their absence or that the observer did not record them. During the 1981 observer trips, 269 halibut were examined and 200 (74%) were in excellent condition, 11 (4%) were in fair to good condition, and 58 (22%) were dead.

The 1991-92 fishery was prosecuted by six vessels in the Kodiak area and three in the Central Region. Fishing activity began in November 1991 and continued through early April 1992. Different vessels carried from 150 to 1000 fathoms of gillnet, with an average of 461 fathoms (Figure 2). Most vessels fished several sets of gear simultaneously. There were 50 to 500 fathoms fished in a single set, with an average of 205 fathoms of net (Figure 2). Set duration ranged from 1 to 40 hours and averaged 6.3 (Figure 2). Although overnight sets were only 8% of the reported total, it was common practice to set or retrieve gear in the dark. Depth fished was from 20 to 110 fathoms with an average of 46 (Figure 2).

Observers made five trips on three different vessels in 1992. The catch was predominantly cod, pollock, and flounder (Table 2, Figure 1). Catch rate of halibut was 2.9% of the landed weight of cod (Table 2). King crab, Tanner crab, and porpoise were not taken (Table 2). Observers reported catch rates of 0.2 salmon per metric ton, and 1.8 birds per metric ton (Table 2) identified

as murres and one cormorant. Observers in 1992 reported two of 77 halibut (less than 3%) caught and evaluated for condition on observed trips were injured, probably fatally, but the others were released unharmed.

Logbook data from 64 trips by nine vessels in 1991-92 are currently useable. Catches were predominantly Pacific cod, flounder, other, pollock, and halibut (Table 3, Figure 1). One porpoise was reported in a logbook. Bycatch rates from logbooks were 2.3% halibut by weight, 0.2 king crab per metric ton, 0.4 Tanner crab per metric ton, 0.1 salmon per metric ton, and 0.5 birds per metric ton (Table 3). Some of the logs contained notes on the number of halibut released alive and the number dead. These amounted to 4% released dead.

DISCUSSION

A concern over any fishing gear is its impact on other resources. The bycatch rate is the usual measure for comparing this impact. Bycatch rate is usually expressed as a weight percent for halibut and as numbers of individuals per metric ton for other species. The bycatch of sunken gill nets included halibut, red king crab, Tanner crab, salmon, herring, harbor porpoise, and birds.

Tanner crab and king crab were caught at a much higher rate in 1981 than in the 1991-92 fishery (Figure 3). The relative absence of crab in the 1991-92 sunken gillnet catch can be attributed to record low crab numbers in the Gulf of Alaska in 1991-92 (Westward Region Shellfish Staff, 1992).

A common feature of crab bycatch is high variability. Many catches contain no crab while a few catches have large numbers. What this means is: areas where crab are not found are large and the density of crab where they are found is great, compared to other species. This high variability is most apparent in the king crab bycatch (Tables 2 and 3) where all the catch in 1991-92 was in one trip, which was not observed. When variability is high, as it is with crab, an especially large sample must be obtained to generate a realistic rate. And, in practice, projecting total bycatch within a year is not precise since most of the bycatch may occur in the unobserved or unreported catches.

The higher halibut bycatch rate in gillnets in 1981 may be due to a higher abundance of halibut at that time (Figure 4).

The appearance of any animal in bycatch statistics implies that it was killed, but this is not necessarily the case. Salmon are active fish and easily lose scales so a high mortality would be anticipated. Halibut often survive capture. The data recorded by sunken gillnet observers in 1981 indicated 74% in excellent condition, 4% in fair to good condition, and 22% were dead. However, the observations in 1991-92 by observers and from the logbooks indicated considerably better condition, with only 3-4% apparently dead upon release. The duration of sets averaged 20 hours in the 1981 observer data and 3.1 hours in the 1992 observer data, which could cause the difference in survival rates of halibut, but this is not known.

The occasional killing of a porpoise and the constant killing of birds are issues that transcend fishery management; they are emotionally charged and may result in public reaction against this fishery, a reaction which could spill over into public dissatisfaction with other fisheries. The take of birds at 0.5 to 1.8/mt translates into 111 to 264 birds in the portion of the fishery reported here for the 1991-92 season. The National Marine Fisheries Service is in the process of establishing allowable levels of removal of marine mammals for each species and population (NMFS, 1991). According to NMFS (1991) the annual take of harbor porpoise in Alaska by all means is estimated at less than 100. The fishing gear which is discussed in association with harbor porpoise take is gillnet (NMFS, 1991).

OTHER CONSIDERATIONS FOR THE BOARD OF FISHERIES

The use of sunken gillnets in federal waters off Alaska may become illegal after the North Pacific Fishery Management Council (NPFMC) adopts definitions of legal gear for fishing for groundfish. The NPFMC is scheduled to address an amendment to the Gulf of Alaska Groundfish Management plan at the December 1992 meeting, which will define legal gear. Currently sunken gillnets are not included in the amendment although they could be added before or after adoption. The purpose of the amendment is to prevent fishermen from designing new gear which fit none of the existing definitions thereby getting around existing bycatch restrictions; it is not to make any gear illegal. If the amendment is adopted it would probably become effective as early as March or as late as May 1993 (Chris Oliver, NPFMC, personal communication, Oct 28, 1992).

Since the North Pacific Fishery Management Council handles management of groundfish resources in federal waters off Alaska and places considerable emphasis on bycatch control, should the state encourage fisheries that operate with no bycatch control?

Should the state attempt to keep regulations as similar as possible to those used in adjacent federal waters? Perhaps other questions exist as well.

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Table 1. Sunken gillnet catch numbers by species, pounds of halibut, number of hours, and depth fished on five observer trips in the Kodiak area, 1981. Numbers in parentheses are estimates.

			BYCATCH							CATCH				
MONTH	HOURS NET OUT	DEPTH FATHOMS	HALIBUT NUMB	HALIBUT LBS	RED KING CRAB	TANNER CRAB	PORPOISE	SALMON	HERRING	PACIFIC COD	POLLOCK	FLND[a]	OTHER[b]	COMMENTS
Trip 326[c]														
Unk			42	(182)	3	16	0	0	0	(730)				Trip Total
Trip 413														
May	14	70	5	23	1	0	0	0	0	57	44	9	0	
May	15	65	9	39	0	5	0	0	0	129	59	4	0	
May	20	65	18	101	1	6	0	0	0	73	170	6	2	
May	22	65	28	100	1	44	0	0	0	367	267	4	2	
May	17	65	13	49	0	4	0	0	0	19	111	6	1	
May	19	65	9	22	1	0	0	0	0	18	56	0	1	
TRIP TOTAL			82	334	4	59	0	0	0	663	707	29	6	
Trip 414														
May	19	85	8	100	0	1	0	0	0	163	11	9	5	1 Rockfish
May	20	85	0	0	0	0	0	0	0	45	10	5	2	
May	26	75	13	56	0	8	0	0	0	173	12	12	9	
May	25	60	0	0	0	0	0	0	0	60	(18)	(4)	(3)	
May	19	75	8	26	0	0	0	0	0	13	12	4	5	
May	19	70	22	152	0	0	0	0	0	63	14	7	3	1 Scallop, 1 Skate
May	15	60	6	59	0	1	2	0	0	132	32	4	8	2 Scallop, 2 rockfish
May	13	55	4	39	0	0	0	0	0	61	25	1	1	
May	16	55	6	25	1	3	0	0	0	70	69	4	2	
May	17	63	1	29	0	3	0	0	0	18	38	5	6	
TRIP TOTAL			68	486	1	16	2	0	0	798	241	55	44	
Trip 415														
May	23	83	12	48	5	6	0	0	0	(31)	(25)	(5)	(7)	1 rockfish
May	36	85	10	40	26	35	0	1	0	(58)	(43)	(10)	(12)	1 king salmon, 1 rockfish
May	22	55	4	16	4	2	0	0	2	(61)	(59)	(11)	(17)	
June	22	55	23	86	50	130	1	0	1	475	320	39	81	
June	35	55	23	130	10	37	1	0	3	206	128	75	61	
June	18	48	17	76	28	33	0	0	0	253	293	55	54	1 hair crab
June	18	45	7	37	8	7	0	0	0	104	70	22	17	
June	14	42	10	37	27	33	0	0	0	(225)	(137)	(40)	(38)	1 rockfish
TRIP TOTAL			106	470	158	283	2	1	6	1413	1075	257	287	
Unnumbered trip														
Sept	15	48	0	0	0	0	0	0	0	2	0	31	6	Net badly tangled when retrieved
Sept	14	60	42	(182)	1	2	0	0	0	(35)	(16)	(500)	(240)	2,000 lbs; 60% Sculpin, 25% sole, 13% cod and 2% pollock
TRIP TOTAL			42	182	1	2	0	0	0	37	16	531	246	
TOTAL ALL TRIPS[c]			298	1472	164	360	4	1	6	2911	2039	841	577	
NO./MT			18.3	4.2%	10.2	23.6	0.3	0.1						

[a]FLND - Flathead sole, yellowfin sole, arrowtooth flounder, and starry flounder.
[b]OTHER - Sculpin, dogfish, wrymouth, and snailfish.
[c]Total does not include trip 326.

Table 2. Sunken gillnet catch numbers by species, pounds of halibut, number of hours, and depth fished from observer data from the Kodiak, and Chignik areas in spring 1992. Each line represents one set.

MONTH	HOURS NET OUT	DEPTH FATHOMS	--HALIBUT-- NUMB	LBS	KING CRAB	TANN CRAB	PORP OISE	SALMON	BIRD	-------NUMBER------- COD	POLL	FLNDR	OTHR
Feb	2.5	60	11	44.0	0	0	0	0	0	54	0	1	0
Feb	3.2	62	32	87.0	0	0	0	0	0	274	0	8	0
Feb	2.7	66	2	16.0	0	0	0	0	0	31	0	2	0
Feb	1.1	65	1	3.0	0	0	0	0	0	4	0	0	0
Feb	5.1	24	0	0	0	0	0	0	0	2	0	0	0
Feb	5.2	24	0	0	0	0	0	0	0	90	1	3	1
Feb	6.2	35	1	2.6	0	0	0	0	3	102	9	3	3
Feb	3.0	32	0	0	0	0	0	0	0	31	2	1	2
Feb	1.8	29	1	3.2	0	0	0	0	0	65	13	4	2
Feb	4.2	30	4	13.8	0	0	0	0	0	81	1	4	2
Feb	2.0	30	1	3.0	0	0	0	0	0	3	0	1	0
Feb	2.0	31	2	36.2	0	0	0	1	2	14	0	0	0
Feb	3.0	30	1	2.6	0	0	0	0	0	23	1	0	0
Feb	3.0	36	0	0	0	0	0	0	0	42	2	1	1
Feb	3.8	35	0	0	0	0	0	0	0	5	0	2	9
Feb	4.4	60	6	30.6	0	0	0	0	1	14	19	4	0
Feb	4.0	53	14	86.7	0	0	0	0	0	56	4	6	0
Feb	4.2	52	1	2.1	0	0	0	0	0	21	0	2	1
Feb	2.0	28	2	4.0	0	0	0	0	0	64	0	0	2
Feb	3.0	30	1	1.0	0	0	0	0	0	30	0	3	0
Feb	4.0	35	16	48.0	0	0	0	0	0	43	2	25	4
Feb	2.0	30	2	3.0	0	0	0	0	0	274	127	10	16
Feb	4.0	33	2	6.0	0	0	0	0	0	109	4	9	2
Feb	5.5	35	5	28.0	0	0	0	0	0	113	4	15	2
Feb	2.0	34	3	20.0	0	0	0	0	6	34	3	3	2
Feb	2.5	35	4	34.3	0	0	0	0	2	13	2	7	0
Feb	3.0	40	5	18.5	0	0	0	0	0	13	2	12	1
Feb	3.5	35	1	9.2	0	0	0	0	0	18	0	2	1
Feb	3.0	40	6	22.8	0	0	0	0	0	15	5	0	1
Feb	2.5	32	4	9.0	0	0	0	0	0	59	59	9	0
Feb	4.5	41	0	0	0	0	0	0	0	21	2	1	0
Feb	3.0	36	5	19.4	0	0	0	0	2	73	45	8	2
Feb	3.0	31	0	0	0	0	0	0	0	22	3	1	0
Feb	3.5	33	4	13.3	0	0	0	0	0	81	6	5	1
Feb	2.5	64	4	43.0	0	0	0	0	0	28	0	0	0
Feb	1.5	73	2	9.9	0	0	0	0	0	4	0	0	0
Feb	2.0	71	2	10.3	0	0	0	0	0	4	0	0	0
Feb	2.0	33	0	0	0	0	0	0	0	28	0	0	0
Feb	0.5	36	1	6.5	0	0	0	0	0	28	0	0	0
Feb	2.0	34	2	18.8	0	0	0	0	0	64	0	0	0
Feb	3.5	47	4	25.1	0	0	0	0	0	58	0	0	0
Feb	3.0	37	1	2.2	0	0	0	0	3	122	0	0	0
Feb	3.0	57	1	3.3	0	0	0	1	0	101	0	0	0
Total	132.4		154	686.4	0	0	0	2	19	2331	316	152	55
#/mt			14.5	2.9%				0.2	1.8				

Table 3. Sunken gillnet catch numbers, or pounds where noted, by species, pounds of halibut, number of hours, and depth fished from logbook data from the Kodiak, Cook Inlet, and Chignik areas, late 1991 through spring 1992. Each line represents one trip. Numbers in parentheses are estimates or largely estimates.

MONTH	HOURS NET OUT	AVG DEPTH FATHOMS	--HALIBUT-- NUMB	LBS	KING CRAB	TANN CRAB	PORP OISE	SALMON	BIRD	--------POUNDS*------ COD	POLL	FLNDR	OTHR
Nov	N/A	100	0	0	0	0	0	0	0	1600	0	27	75
Dec	6	40	0	0	0	0	0	0	0	504	0	0	0
Dec	10	40	0	0	0	0	0	0	0	381	71	0	717
Dec	10	96	6	25	0	0	0	0	0	800	80	250	1036
Dec	10	100	2	100	0	0	0	0	0	250	0	0	160
Dec	10	105	2	4	0	0	0	0	0	550	0	200	0
Dec	9	90	0	0	0	4	0	0	0	320	0	0	10
Dec	50	28	79	267	0	0	0	0	0	14300	470	850	103
Dec	16	25	23	43	0	0	0	0	0	6000	75	110	92
Dec	41	37	101	591	0	0	0	0	0	7000	50	3240	1590
Jan	40	50	2	10	(50)	(50)	0	0	0	3000	50	100	130
Jan	86	48	32	205	0	0	0	2	0	3020	90	490	595
Jan	141	42	6	85	0	0	0	0	0	2640	0	625	180
Jan	36	30	16	91	0	0	0	0	1	14400	37	67	23
Jan	8	60	3	30	0	0	0	0	0	10000	17	80	15
Jan	67	34	103	438	0	1	0	0	6	6950	305	535	162
Jan	72	39	91	485	0	1	0	1	2	10300	180	950	18
Jan	24	33	33	135	0	0	0	0	0	3520	65	230	44
Jan	25	55	29	115	0	0	0	0	2	1600	10	282	57
Jan	46	33	99	463	0	0	0	0	4	12650	925	855	416
Jan	14	28	15	78	0	0	0	0	0	1300	15	55	142
Feb	201	55	5	110	0	0	0	0	0	4560	0	380	330
Feb	24	50	2	30	0	0	0	0	2	490	0	30	20
Feb	11	38	3	20	0	0	1	0	5	3900	0	140	54
Feb	16	33	9	46	0	2	0	0	3	5200	0	70	85
Feb	37	31	23	120	0	9	0	0	1	6300	0	60	70
Feb	14	40	29	109	0	0	0	1	7	4100	0	50	75
Feb	23	32	29	90	0	0	0	0	1	4260	137	62	26
Feb	35	35	20	82	0	0	0	0	0	17500	48	71	19
Feb	45	35	23	90	0	0	0	0	0	20000	84	90	35
Feb	64	39	19	90	0	0	0	0	0	14550	135	176	24
Feb	10	63	46	150	0	0	0	0	0	3381	0	11	0
Feb	68	51	3	10	0	0	0	0	0	3500	0	180	53
Feb	55	55	3	10	0	0	0	0	0	3300	0	130	85
Feb	79	54	10	35	0	0	0	0	0	3950	0	145	71
Feb	78	36	139	1140	0	0	0	0	16	16650	290	588	180
Feb	14	37	36	155	0	0	0	0	8	2955	114	215	0
Feb	22	49	15	80	0	0	0	1	2	3835	85	125	10
Feb	89	50	149	700	0	3	0	1	15	23575	300	725	60
Feb	31	53	32	1150	0	2	0	0	1	3650	55	570	100
Feb	46	54	33	162	0	0	0	0	11	11165	105	345	5
Mar	37	60	32	264	0	1	0	0	1	3300	150	430	10
Mar	28	56	20	100	0	0	0	0	1	3550	70	210	20
Mar	68	49	43	129	0	0	0	1	11	9475	433	2470	639
Mar	24	34	33	163	0	0	0	1	0	2050	335	615	415
Mar	153	31	90	453	0	0	0	4	0	26000	105	275	66
Mar	20	46	6	18	0	2	0	1	2	2570	270	58	50
Mar	6	60	6	60	0	0	0	0	0	1000	0	70	25
Mar	38	36	26	103	0	2	0	2	5	5800	375	90	82
Mar	8	38	8	32	0	0	0	0	0	1200	0	25	20
Mar	22	38	29	114	0	0	0	0	0	6000	100	130	35
Mar	58	51	6	80	0	0	0	1	0	2700	0	420	60

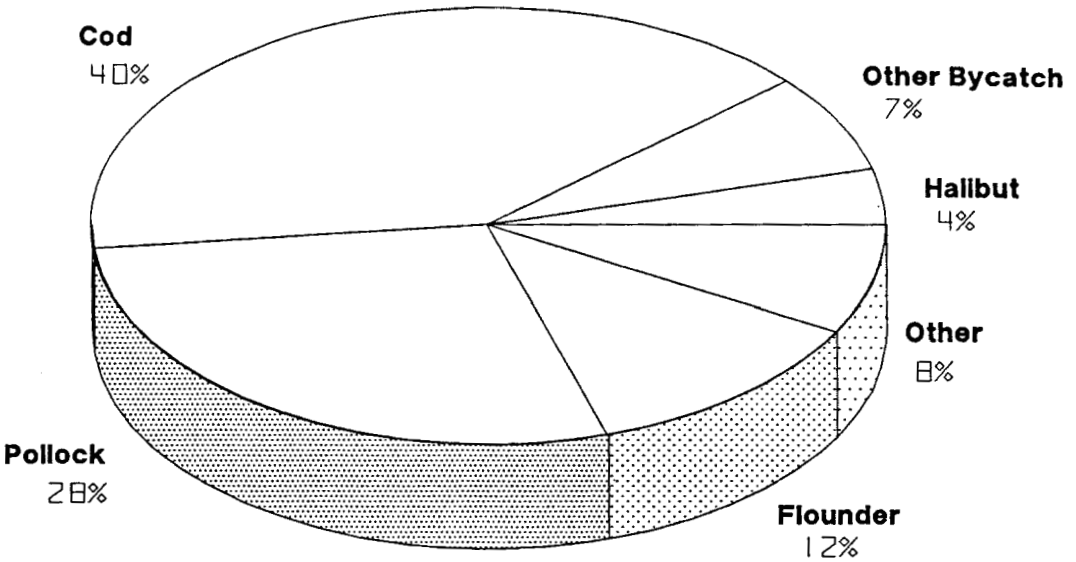
-Continued-

Table 3. (page 2 of 2)

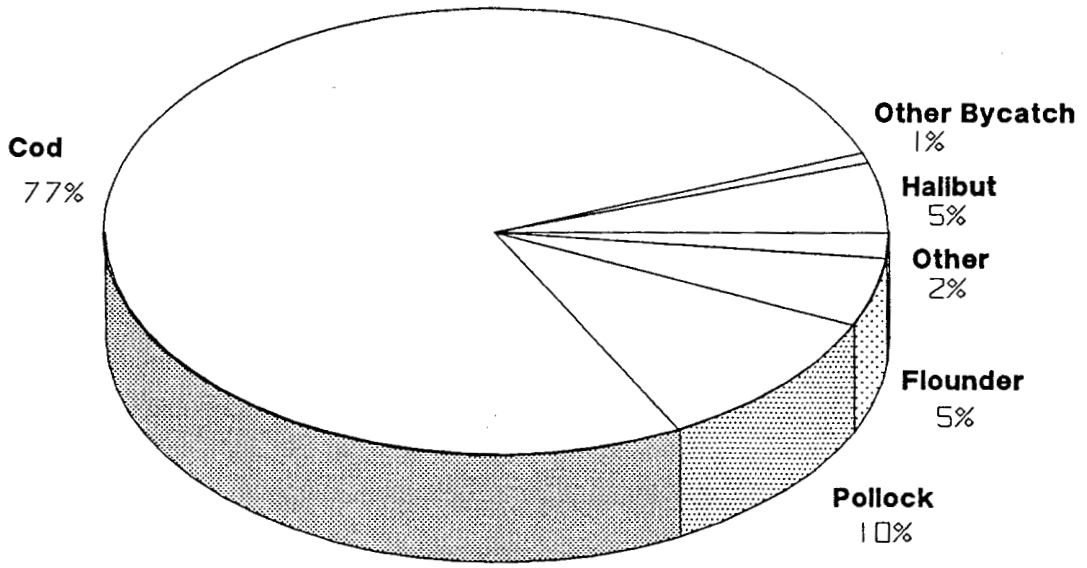
MONTH	HOURS NET OUT	AVG DEPTH FATHOMS	--HALIBUT-- NUMB	LBS	KING CRAB	TANN CRAB	PORP OISE	SALMON	BIRD	-------POUNDS*------ COD	POLL	FLNDR	OTHR
Mar	18	45	1	120	0	0	0	0	4	2400	150	500	100
Mar	20	45	2	10	0	0	0	0	0	4400	400	1500	60
Mar	14	40	3	10	0	0	0	0	0	1100	250	560	50
Mar	30	40	4	30	0	0	0	1	0	3000	500	1040	50
Mar	44	63	26	127	0	0	0	0	0	10970	5	36	3
Mar	40	63	15	75	0	0	0	0	0	9970	12	29	0
Mar	20	56	16	97	0	0	0	0	0	5800	11	91	20
Mar	66	66	32	165	0	0	0	0	0	10950	65	675	1
Mar	N/A	42	0	0	0	0	0	0	0	790	128	11	0
Mar	85	46	83	429	0	0	0	6	0	11471	124	486	40
Mar	194	38	73	248	0	0	0	3	0	27320	0	4520	86
Apr	98	27	16	80	0	0	0	0	0	14720	0	55	20
	2773		1840	10451	(50)	(77)	1	26	111	424442	7276	27405	8719
#/mt			9.1	2.3%	0.2	0.4		0.1	0.5				

% Percent by weight.

* Units for Pollock, flounder and other are probably mixed, numbers and pounds.



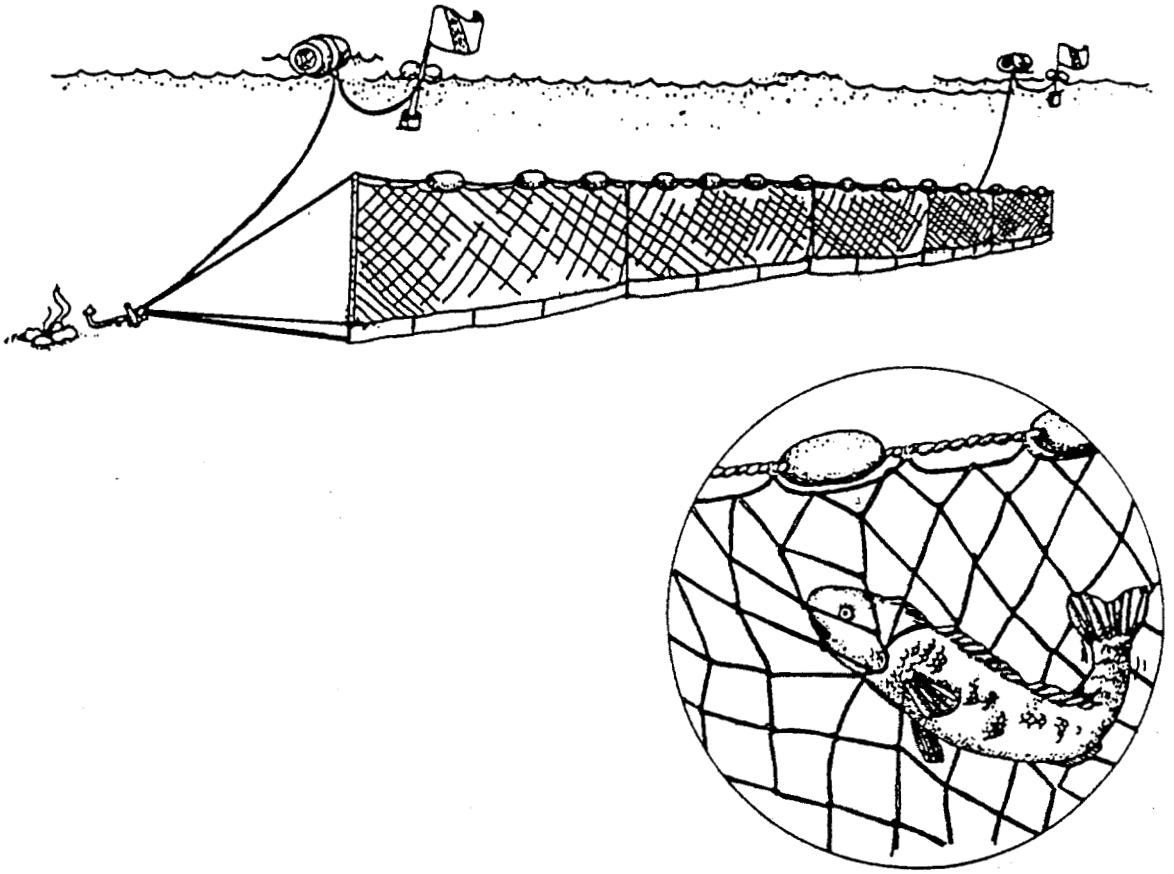
1981 Observer



1992 Observer

Figure 1. Species composition of the catch, in numbers of animals in sunken gillnets in the Kodiak area in 1981 as determined by observers, and in the Kodiak and Chignik areas in 1992 as determined by observers.

Figure 2. General illustration and description of the sunken gillnet gear used in the 1991-92 Pacific cod fishery.



Item	Average	Range	Standard Deviation
Total Length of Net Fished Per Vessel (fathoms)	461	150 - 1,000	288
Net Length Per Set (fathoms)	205	50 - 500	93
Mesh Size (Inches)		5 1/2 - 7	
Set Duration (hours)	6.3	1 - 40	5.1
Water Depth Fished (fathoms)	46	20 - 110	15

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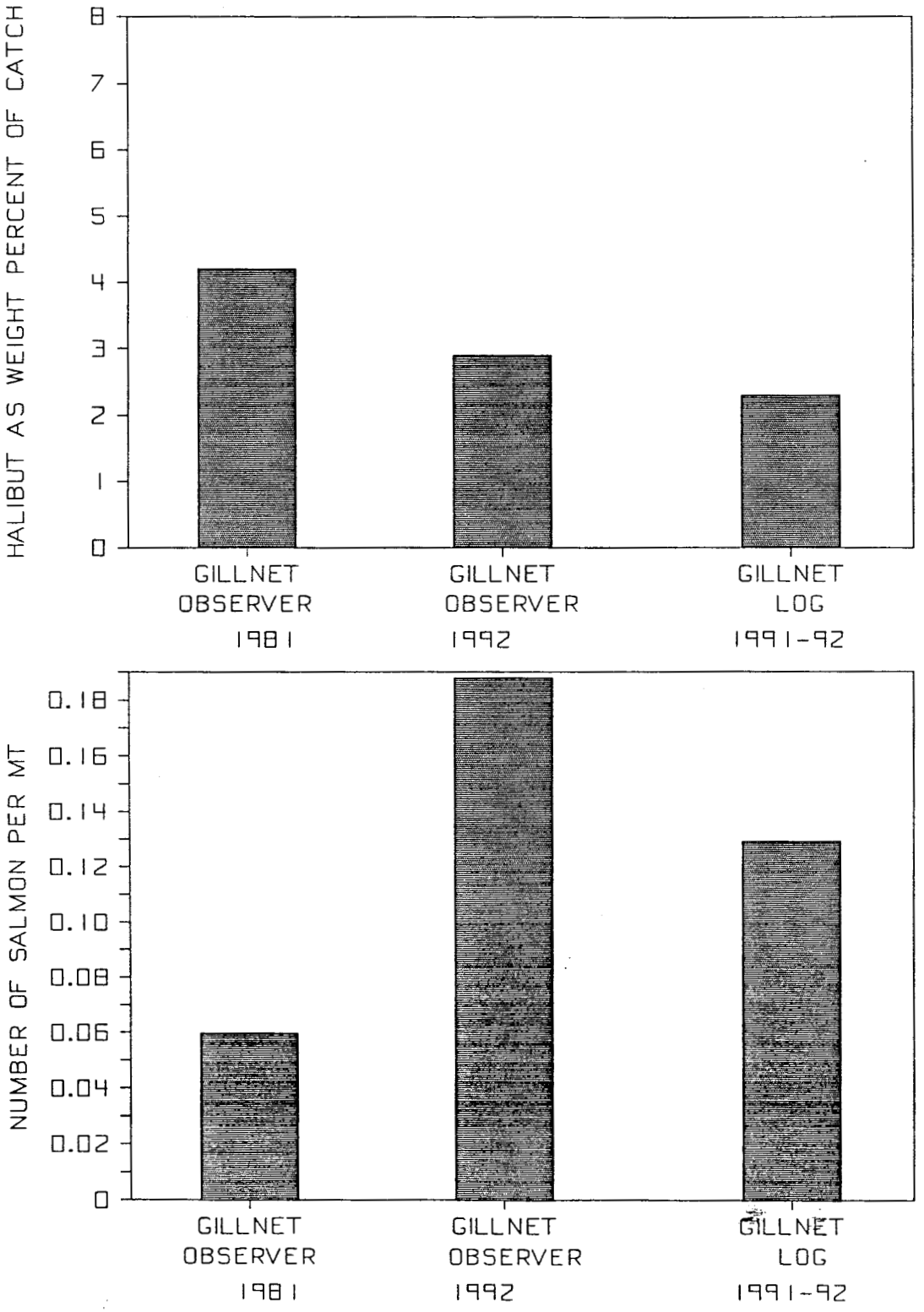

Figure 4. Bycatch rates of halibut and salmon for the Pacific cod fishery with sunken gillnets in the central Gulf of Alaska.

APPENDICES

Appendix A.1. Sunken gillnet permit for 1991-92.

PERMIT NUMBER _____
COMPUTER ENTRY _____
FOR DEPARTMENT USE ONLY

ALASKA DEPARTMENT OF FISH AND GAME
Division of Commercial Fisheries

PLEASE PRINT CALENDAR YEAR 19_____

VESSEL NAME _____ ADF&G NUMBER _____

KEEL LENGTH _____ HORSEPOWER _____ NET TONS _____

OWNER OR AUTHORIZED AGENT _____

ADDRESS OR P.O. BOX _____

CITY-STATE-ZIP _____ PHONE NO. _____

INTERIM USE (CFEC) CARD #: MARINE MAMMAL EXEMPTION #:

TARGET SPECIES _____, _____, _____

INTENDED PORTS: _____, _____, _____

TYPE OF OPERATION: (check one) [ ] Catcher only; [ ] Catcher-seller;
[ ] Catcher-processor; [ ] Other (specify) _____

NOTE: Vessels may be validly permitted for only one area at a time.
Check one of the following as your permit area:

[ ] E - Prince William Sound
[ ] J1 - Central Gulf of Alaska (north and east of Cape Douglas)
[ ] J2 - Kodiak (south of Cape Douglas, east of 159°W)
[ ] J3 - Aleutian Islands (south of 55°N, west of 170°W)

PERMIT DURATION: FROM _____ TO _____

TOTAL FATHOMS OF EACH MESH SIZE: _____

ADDITIONAL TERMS OF THIS PERMIT: _____

** I have read and agree to this specifications of this permit as outlined above and on the reverse.

** _____ _____
SIGNATURE OF VESSEL OWNER OR AGENT LOCATION OF ISSUE

_____ _____
DEPARTMENT REPRESENTATIVE DATE OF PERMIT

Appendix A.2. Sunken gillnet permit terms for 1991-92.

ALASKA DEPARTMENT OF FISH AND GAME
SUNKEN SET-GILLNET PERMIT FOR 1991

By authority of 5 AAC 28.230 (a), 5 AAC 28.430, and 5 AAC 28.630, the following permit terms have been adopted for sunken set-gillnet fisheries in State waters of the Prince William Sound, Central Gulf of Alaska, and Aleutian Islands management areas.

LOGBOOKS AND REPORTING:

1. Prior to fishing, the vessel operator must meet and discuss permit requirements with an ADF&G biologist responsible for groundfish fisheries in the intended harvest area.
2. Each permit is valid for 30 days from the date of issue.
3. State issued logbooks must be maintained. Information recorded for each set must include date/time the gear was set/pulled, Loran C coordinates, average water depth, fathoms of gear set, mesh size, mesh depth, and number and pounds (round weight) of all catch, including discards.
4. Logbooks must be submitted to ADF&G after every fishing trip.
5. Vessels must comply with all State and Federal fishing regulations, fish ticket reporting, etc. Permit applicants must possess the appropriate interim use permit (CFEC card) and Marine Mammal Exemption permit before a sunken gillnet permit will be issued.
6. Any lost gear must be reported immediately.

GEAR SPECIFICATIONS:

1. The net must be designed and fished so that the web is fishing not less than 18 inches off the bottom.
2. Buoys, marked with the ADF&G vessel number followed by the letters "SG" (to identify gear as Sunken Gillnet), must be attached to each end of the gillnet.
3. The webbing must be attached to the leadline with 100% untreated cotton twine.
4. A sunken gillnet may be no longer than 300 fathoms in length. Each vessel may operate a maximum of 1,000 fathoms of sunken gillnet in the aggregate.

GEAR OPERATION:

1. Sunken gillnets may only be operated from September 15 through April 14, or as further restricted by the Department.
2. The permit vessel must be within 1/2 mile of the gear at all times that the gear is being fished.
3. Sunken gillnet gear must be fished entirely submerged with only the marker buoys at the water surface.
4. All salmon, crab, and halibut must be returned to the water immediately.
5. Only bottomfish for which the commercial season is currently open may be retained.
6. ADF&G may require an observer. If an observer is deemed necessary by the Department, no fishing activity will occur until an observer is available. The vessel operator has the option of hiring a National Marine Fisheries Service (NMFS) certified observer who will meet with local ADF&G staff before and after observations.
7. Failure to comply with the conditions of this permit will void operator's and vessel's privilege to fish sunken gillnets in State waters.

Appendix A.3. Sunken gillnet logbook for 1991-92.

CONFIDENTIAL DATA

YEAR _____

VESSEL NAME _____

VESSEL ADF&G _____

PERMIT NO. _____

SUNKEN GILLNET LOGBOOK

Hand deliver or mail with ADF&G fish ticket to:

ALASKA DEPARTMENT OF FISH AND GAME
3298 Douglas St.
Homer, AK 99603

	SET # _____	SET # _____	SET # _____
DATE			
TIME SET			
TIME PULLED			
STAT AREA			
LORAN C COORDINATES			
WATER DEPTH (AVG.)			
GEAR LENGTH			
MESH SIZE & DEPTH			
DISTANCE OFF BOTTOM			
TOTAL CATCH (round weight in lbs) INCLUDING DISCARDS			
PACIFIC COD (Lb)			
ROCKFISH (Lb)			
SABLEFISH (Lb)			
LINGCOD (Lb)			
HALIBUT (No. & Lb)			
KING CRAB (No.& Lb)			
TANNER CRAB (No.&Lb)			
SALMON (No. & Spec.)			
OTHER (Specify)			
OTHER (Specify)			
OTHER (Specify)			
OTHER (Specify)			
COMMENTS:			

The Alaska Department of Fish and Game administers all programs and activities free from discrimination based on race, color, national origin, age, sex, religion, marital status, pregnancy, parenthood, or disability. The department administers all programs and activities in compliance with Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, and Title IX of the Education Amendments of 1972.

If you believe you have been discriminated against in any program, activity, or facility, or if you desire further information please write to ADF&G, P.O. Box 25526, Juneau, AK 99802-5526; U.S. Fish and Wildlife Service, 4040 N. Fairfax Drive, Suite 300 Webb, Arlington, VA 22203 or O.E.O., U.S. Department of the Interior, Washington DC 20240.

For information on alternative formats for this and other department publications, please contact the department ADA Coordinator at (voice) 907-465-6077, (TDD) 907-465-3646, or (FAX) 907-465-6078.